

ANNEX P

HAZARD MITIGATION

CITY OF HOUSTON

APPROVAL & IMPLEMENTATION

ANNEX P

HAZARD MITIGATION

ANNEX REDACTED – DATA REMOVED

RECORD OF CHANGES

ANNEX P

HAZARD MITIGATION

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ANNEX P

HAZARD MITIGATION

I. AUTHORITY

See City of Houston Emergency Management Plan
Disaster Mitigation Act of 2000
Pertinent Executive Orders

II. PURPOSE

The purpose of this annex is to provide the concepts for administrative and operational activities, which could lead to the reduction and/or possible removal of those conditions that cause potential hazards or are hazardous to the public. Provide for long-term programs that could reduce the negative effects of disasters or emergencies. In addition, develop guidelines to manage mitigation efforts in concert with state and federal policies.

III. EXPLANATION OF TERMS

DEM	Texas Division of Emergency Management
DPS	Texas Department of Public Safety
EMC	Emergency Management Coordinator
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
HMC	Hazard Mitigation Coordinator
HMT	Hazard Mitigation Team
OEM	Houston Office of Emergency Management

IV. SITUATIONS AND ASSUMPTIONS

A. Situation

The City of Houston is susceptible to natural, technological, and human caused hazards. Mitigation efforts are taken to minimize or eliminate the affects of these hazards. Mitigation actions are rarely a quick fix. Many projects take several years to plan, fund and implement.

B. Assumptions

1. Some events such as severe weather are unavoidable.
2. The effects of some events can be minimized by mitigation actions.
3. Actions can be taken which may eliminate or reduce the probability of a disaster's impacts.
4. There is the need for coordination of local, state and federal mitigation efforts with individuals, corporations, and public entities.

V. CONCEPT OF OPERATIONS

A. General

The City of Houston will continue its current hazard mitigation efforts; such as flood plain management, building and fire inspections, and regular enforcement of laws and ordinances. These actions reduce the risk and effects of hazardous situations. The City of Houston will identify actions that may be taken to eliminate or reduce impacts of disasters and plan for the long-term improvements. The Texas Division of Emergency Management, Hazard Mitigation Coordinator, may provide information to assist the City of Houston in their mitigation efforts.

1. This annex is not intended to describe in detail all aspects of the mitigation program for the City of Houston. The achievement of hazard mitigation objectives is a governmental initiative, and all departments will seek out and implement risk reduction measures.
2. The City of Houston's Office of Emergency Management (OEM) is responsible for coordinating mitigation activities with other City departments. In addition, OEM will work with county, state, and federal agencies on mitigation issues that are appropriate for the City. To achieve an effective mitigation program, OEM will create a Hazard Mitigation Team (HMT) composed of department representatives and/or agencies having direct mitigation responsibilities.
3. This mitigation planning and implementation process is intended to facilitate the identification and implementation of appropriate mitigation actions. This process, in turn, facilitates the development of a joint objective with local, state, and federal partners.

B. Hazard Mitigation Coordinator (HMC)

1. The HMC is appointed by and serves under the Emergency Management Coordinator in the Office of Emergency Management.
2. The HMC chairs the hazard mitigation committee.
3. The HMC serves as the primary point of contact on all hazard mitigation projects submitted for grant funding.
4. The HMC serves as the liaison between State/Federal agencies and the City Departments on hazard mitigation projects.

C. Hazard Mitigation Team (HMT)

1. Members of the HMT provide a multi-disciplined local capability to identify mitigation opportunities and implement mitigation measures in either a pre-incident or a post-incident situation.

2. The HMT is a standing organization with flexible membership that uses a standardized approach dependent upon the particular mitigation activity under consideration. This flexibility allows the OEM to tailor the group to meet the situation while insuring the involvement of appropriate individuals from the community.
3. The data collection process provides a systematic means to identify hazards and assess their impact on this jurisdiction.
4. The Hazard Mitigation Team provides a means to develop a multi-disciplined, on-going mitigation planning and implementation process.
5. Consistent with capabilities, the State Division of Emergency Management (DEM) may provide technical assistance and guidance to achieve effective risk reduction.

D. Supporting Documents

1. In 1999 the City of Houston developed a risk assessment and vulnerability analysis for natural and some technological hazards. This document is maintained by the OEM. The document is at a minimum updated annually by the HMT with every effort being made to incorporate new information as it becomes available. The vulnerability analysis is a tool used by the HMT to develop the Hazard Mitigation Plan.
2. The City is currently developing a Hazard Mitigation Plan that initially will address natural hazards with the intent to expand the document to address all hazards. The document, when created, will be at a minimum updated annually by the HMT with every effort being made to incorporate new information as it becomes available.
3. Documents prepared to identify vulnerabilities and subsequent mitigation measures identified to mitigate the effect are prepared to be complementary of each other. Plans developed for facilities should fold into the local plan; the local plan should fold into the County, Regional and eventually the State plans. Hazards do not typically limit themselves to jurisdictional boundaries and every effort will be made to ensure proper coordination exists when mitigating the impacts.
4. Copies of these documents have very limited distribution. If a person or organization would like to view or have copies of specific material, a written open records request would be required, with the purpose of how this material will be utilized specified in the request.

E. Operations of the Hazard Mitigation Team

1. General

Hazard mitigation activities are not only in response to an incident and a known hazard, but are also an active search for ways to prevent or reduce the impact from newly discovered hazards. The mitigation process is long-term in nature and therefore is an ongoing element of the emergency management program, which directly influences preparedness, response and recovery efforts. Mitigation activities can be initiated at any time, but are classified as either pre-incident or post- incident actions.

2. Pre-Incident

Pre-incident mitigation takes place before the occurrence of an incident. This period provides a more relaxed atmosphere for the development and implementation of long-term, multi-hazard oriented mitigation measures and is the most appropriate time for reducing risks and potential damages.

- a. City of Houston departments should develop plans and engineering designs to implement long-term improvements. These efforts will be geared to minimize the effects of disasters on public and private facilities necessary for public health and safety.
- b. The HMT will meet on a regular basis for the purpose of developing mitigation projects, prioritizing existing projects, updating, and maintaining the hazard analysis.

3. Post-Incident

Post-incident mitigation takes place after an incident has already adversely affected this jurisdiction. These activities are a response and are too late to prevent or reduce impacts already suffered. Heightened hazard awareness and a desire for speedy recovery provide an emphasis for conducting mitigation activities.

- a. Following a Presidential Disaster Declaration, the City's HMT will be used to assess City Facilities damaged by the disaster and identify mitigation opportunities to prevent future damage.
- b. Recommendations will be used to seek funding assistance for mitigation projects under Sections 404 and 406 of Public Law 93-288.
- c. Section 406 allows funding to prevent site specific damage related to the disaster

- d. Section 404 receives funding from Public Assistance under Public Law 93-288. Application for project funding will be submitted based on pre-disaster priorities that have been identified and developed.
- e. Review and/or develop ordinances, building codes and develop standards to minimize the occurrence and effects of an event.

VI. ORGANIZATION & ASSIGNMENT OF RESPONSIBILITIES

- 1. Houston Office of Emergency Management
 - a. Review mitigation projects and initiatives.
 - b. Monitor hazard mitigation activities.
 - c. Coordinate meetings of Hazard Mitigation Team
 - d. Apply for and manage grants to assist with hazard mitigation.
- 2. Public Works and Engineering
 - a. Manage the Flood Plain Management programs for the City
 - b. Develop storm water management strategies
- 3. Building Services
 - a. Coordinate mitigation actions at City Facilities
 - b. Develop mitigation strategies for post-incident evaluation, planning, and implementation.
- 4. Police Department
 - a. Maintain records, identify hazardous routes prone to transportation accidents
 - b. Enforce regulated hazardous cargo routes to minimize the populations exposure to potential transportation accidents involving hazardous cargo
- 5. Fire Department
 - a. Inspect using and enforce adopted codes
 - b. Conduct pre-fire planning
- 6. Planning and Development Department
 - a. Coordinate with City's Office of Emergency Management on issues such as land use.
 - b. Inspect using and enforce adopted codes
 - c. Providing mapping and other demographic information of the City
- 7. Harris County Flood Control District
 - a. Identify flood hazard areas and develop engineered facilities for transport of storm drainage
 - b. Maintain drainage channels to facilitate storm water runoff
- 8. Harris County Office of Emergency Management

- a. Continue expansion and improvements to an automated flood warning system

VII. DIRECTION AND CONTROL

The Office of Emergency Management will coordinate appropriate hazard mitigation efforts through various City departments. Each department will be responsible for implementing those mitigation efforts that have been approved within their area of responsibility. Departments that have initiated projects will provide the Office of Emergency Management with a quarterly report documenting progress and expenditures.

The Hazard Mitigation Coordinator and alternate are appointed by the Emergency Management Coordinator. Operation succession is developed by the HMT based on the expertise required and the hazard being addressed.

VIII. ADMINISTRATION AND SUPPORT

A. Records and Reports

1. Records of previous incidents and disasters are available upon request from the State. Records contain data pertinent to risk factor analysis and, consequently, aid in determination of mitigation requirements. Risk factor analysis provides a means to determine significant levels of risk or significant incidents that require initiation of a Hazard Mitigation Team Report.
2. The Hazard Mitigation Team Report is a record of mitigation planning and implementation activities. The report is a management tool to facilitate the identification of mitigation opportunities and the development of an action plan and implementation schedule. This report system also provides a means to increase inter-governmental participation in the mitigation process through exchange of ideas, technical assistance, and guidance.
3. Additionally, reports that monitor long-term implementation measures should be prepared, as requested, by those departments having on-going mitigation projects. These reports should identify the scope of the project, estimated cost and estimated completion date. A copy of these reports is to be sent to the OEM.

B. Release and Distribution of Information

1. Hazard Mitigation projects and/or programs which have been funded by city departments or other agencies are provided to OEM upon request. This information is provided to the State DEM in the annual Work Plan.

2. Completed reports, historical records and associated correspondence will be maintained and utilized as a management tool for the continued development of a mitigation strategy for the City of Houston.

IX. ANNEX DEVELOPMENT, MAINTENANCE AND IMPLEMENTATION

The Office of Emergency Management will be responsible for the development and maintenance of this annex. It will be reviewed annually and updated as necessary or every five years.

X. REFERENCES

- A. DEM, *State of Texas Hazard Analysis*.
- B. DEM, *State of Texas Hazard Mitigation Plan*.
- C. DEM, *Mitigation Handbook* (DEM-21).
- D. Risk Assessment and Vulnerability Analysis, (December, 2000).
- E. Additionally instructional material for developing mitigation strategies, implementing mitigation activities, and preventing impacts from a disaster are available from the Office of Emergency Management and via the internet.

APPENDIX A

GLOSSARY

Disaster	A disaster may be defined in these terms: A sudden calamitous event causing g great damages, losses or destruction of property and injury or loss of life. Secondly, an event where the availability of local government resources is exceeded by the magnitude of the event
Disaster Assistance	Provided by the state or federal government is intended to supplement local government resources; thereby, enhancing the recovery capabilities and to achieve a speedy and efficient return to pre-incident conditions
Incident	The occurrence of an action or situation in which people and/or property are placed at risk from the adverse effects of that event. The severity of an incident is determined by the degree and magnitude of the risk
Hazard Mitigation	Any action taken to eliminate, lessen the severity of or reduce long-term risk to human life and property
Mitigation Action	Mitigation measures should compare the cost of implementation against the potential cost of continued damages, if such measures are not taken. Mitigation measures should be less costly to implement than the damages they are intended to prevent. Flood plain management, the adoption and enforcement of safe land use regulations and construction standards are considered as highly appropriate mitigation actions. Such actions are relatively inexpensive to implement, long-term in nature and are applicable on an area-wide basis.

Risk Factors	<p>Identifiable facts and assumptions, that concern the impact of specific or associated hazards. An analysis of interrelated risk factors provides a means to determine the degree and magnitude of risk produced by a particular hazard or an incident. Risks factor may provide means to determine the priority of mitigation planning and implementation activities</p> <ul style="list-style-type: none"> ▪ Number of previous incidents involving this hazard ▪ Probability of future incidents occurring which also involve this hazard ▪ Number of casualties during previous incidents and the number of people potentially at risk from future incidents involving this hazard ▪ Damages to houses, businesses, public facilities and other structures which have been caused by previous incidents and those which are potentially at risk from future incidents involving hazards ▪ Ability of emergency management organizations to effectively respond to incidents involving hazards ▪ Recovery activities needed to return the City of Houston to pre-incident status. The recovery process involves not only time requirements, but also the associated costs to repair damages, restore services and return economic stability after an incident
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APPENDIX B

HAZARD ANALYSIS

The hazard analysis for the City of Houston is maintained separately, the document is reviewed after each disaster and updated annually.

A summary of the Hazard analysis is included in the Basic Plan

APPENDIX C
HAZARD MITIGATION TEAM REPORT

	<p>City of Houston Hazard Mitigation Team Report</p> <p>Date _____</p>
<p>Project Officer _____ E-Mail _____</p> <p>Address _____</p> <p>City <u>Houston</u> State <u>Texas</u> Zip _____</p> <p>Phone _____ Fax _____</p>	
<p>Impact Area:</p>	
<p>Hazard Identification:</p>	
Incident Period: From	To
Number of Previous Events:	Number of Residents at Risk:
<p>Background & Discussion:</p>	
<p>Mitigation Action:</p>	
Lead Department:	Estimated Cost:
Schedule: (Timeframe)	Funding Method:
<p>HMT Recommendations:</p>	